Docket No.: RIVER-001XX

CAR TOP SKI/SNOWBOARD CARRIERS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is related to and claims the benefit of Provisional U.S. Patent Application Number 60/421,006 titled Cartop Ski/Snowboard Carriers, filed by Johnston et al. on October 24, 2002, and incorporated herein by reference.

TECHNICAL FIELD

[0002] The present invention relates to a device for securing an object to the roof of an automobile and more particularly, relates to an easily removable device for the storage and transportation of equipment.

BACKGROUND INFORMATION

[0003] Traditional rooftop carriers typically are rigidly secured to the roof or roof rack of an automobile. These known carriers are typically difficult to install, and as a result are generally permanently installed on a single vehicle or are installed for an extended period of time. Moreover, the known rooftop carriers often require the aid or use of more than one person to install them.

[0004] Upon the arrival at the desired location, for example a ski resort, a user must remove the equipment from the rooftop carrier. Because the known rooftop carriers are left attached to the automobile, the user must carry all the pieces of the equipment individually (e.g., the skis and poles). As a result, transporting the equipment is difficult since the equipment is in individual pieces and is not in an easily transportable package. Consequently, users of traditional rooftop carriers often must purchase separate equipment transporters or carriers to facilitate moving the equipment from the automobile to the desired location, e.g., from the parking lot to the ski lodge or to the ski slope. Another disadvantage of the known rooftop carriers is that a user must purchase a separate storage device for storing the equipment during the off-season or while not in use.

[0005] Accordingly, what is needed is a car top carrier that is easily portable and easily installed on the roof of a car so that the device may be used on multiple vehicles. Once installed, the device should be easy to load and unload equipment. Moreover, the device should be useful for the storage and transportation of the equipment once removed from the automobile while the equipment is not in use.

SUMMARY

[0006] The present invention features a carrier including a body of resilient material for the transportation of equipment such as, but not limited to, skis, snow boards, surf boards, water skis, and the like. The bottom surface of the body includes an engaging surface for engaging a vehicle roof on which the carrier is to be mounted.

[0007] The top surface includes a plurality of raised protrusions defining a support surface sized and shaped to engage a piece of equipment. According to the preferred embodiment, the support surface further includes a slot disposed substantially perpendicular to the support surface. The slot is sized and shaped to contain at least part of the piece of equipment. The slot optionally includes a cavity disposed at an end opposite the support surface.

[0008] The raise protrusions also define a first and at least a second support channel disposed substantially transverse to the support surface. The first and second support channels are sized and shaped to engage a first fastener such as a strap or the like.

[0009] At least a portion of a first and at least a second side of the body further includes a third and at least a fourth support channel, respectively. The third and fourth support channel are sized and shaped to engage at least a second

fastener such as a strap. In the preferred embodiment, the third and the fourth support channel are aligned with the first and the second support channel.

[0010] The bottom surface further includes at least a fifth support channel disposed longitudinally and aligned with the third and fourth support channel. The fifth support channel is sized and shaped to accept the second fastener. In the preferred embodiment, the bottom surface further includes a longitudinally disposed cavity sized and shaped to engage at least part of a roof rack on the vehicle roof.

[0011] According to another embodiment, the carrier comprises a body of resilient material and includes a roof engagement surface disposed about at least a portion of a bottom of the body for engaging a vehicle roof on which the carrier is to be mounted. A plurality of raised protrusions disposed about a top of the body define a support surface sized and shaped to engage a piece of equipment. The raised protrusions also define a first and at least a second support channel disposed substantially transverse to the support surface. The first and the second support channel are sized and shaped to engage a first fastener.

[0012] The carrier also includes a third and at least a fourth support channel disposed about at least a portion of a first and at least a second side portion of the body, respectively. The

third and fourth support channel are sized and shaped to engage at least a second fastener. The second fastener is disposed around at least part of the body through at least the third and the fourth channel and over the piece of equipment such that the second fastener secures the piece of equipment to the carrier. The first fastener is disposed about at least a portion of the top surface of the body through the first and second channel such that the first fastener secures the carrier to the vehicle roof. The protrusions prevent the first fastener from sliding relative to the carrier.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] These and other features and advantages of the present invention will be better understood by reading the following detailed description, taken together with the drawings wherein:

[0014] FIG. 1 is an elevated top view of one embodiment according to the present invention;

[0015] FIG. 2 is a elevated top view of another embodiment according to the present invention;

[0016] FIG. 3 is yet another elevated top view of yet another embodiment according to the present invention;

[0017] FIG. 4 is a plan side view of one embodiment according to the present invention;

[0018] FIG. 5 is a plan view of another embodiment according to the present invention;

[0019] FIG. 6 is a plan view of yet another embodiment of according to present invention;

[0020] FIG. 7 is a perspective view of an end according to one embodiment of the present invention;

[0021] FIG. 8 is a perspective view of the end according to another embodiment of the present invention;

[0022] FIG. 9 is a plan view of the end of one embodiment according to the present invention;

[0023] FIG. 10 is yet another perspective end view of yet another embodiment according to the present invention;

[0024] FIGS. 11 and 12 another embodiment according to the present invention; and

[0025] FIGS. 13 and 14 show different embodiments of the present invention installed on an automobile according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0026] A carrier 10, FIGS. 1 and 4, in accordance with the present invention, allows a user to quickly and easily transport and store equipment, for example sports equipment such as, but not limited to, snow skis, snow boards, surf boards, water skis, and the like. The carrier 10 preferably includes one or more

"blocks" made from a soft resilient material such as, but not limited to, mini-cell high-density foam. Other materials, such as other foams, plastics, or synthetics, are also envisioned. The material is preferably weather resistant such that it does not absorb water.

[0027] The top 12 of the carrier 10 includes a plurality of towers or protrusions 14. In the preferred embodiment, the top 12 of the carrier 10 includes four towers 14, one at each corner, which provide a support channel 15 for the straps 16 that secures both the equipment to the carrier 10 as well as the carrier 10 to the automobile (not shown). The straps 16 can be any fastening device known to those skilled in the art such as rope, twine, cable, chain, utility straps, or the like, but are preferably nylon or polypropylene utility straps. The straps 16 also preferably include a buckle, fastener (such as loop/hook fastener) to allow the user to tighten and secure the carrier 10 as will be described in greater detail below.

[0028] In one embodiment, the carrier 10 includes a width W (the inside distance between opposite towers 14 on each end 18) and a length L (the distance between each side 20) which forms a support surface 22 sized to accept a piece of equipment (not shown) such as, but not limited to, a snow board, surf board, water skis, or snow skis. In the preferred embodiment, the

support surface 22 is flat, though it may also be contoured to better fit certain types of equipment.

[0029] In another embodiment, the top 12, FIGS. 2 and 5, of the carrier 10 includes at least one, preferably two or more, slots 24. Slots 24 may be vertical (as shown in Fig. 2), diagonal, or may be horizontally disposed through the ends 18 (not shown). Slots 24 are spread apart and securely hold and protect equipment. In a preferred embodiment, the slots 24, FIGS. 3 and 6, further include a cavity 26, such as a radius cut-out or the like, sized to hold a pair of skis and/or poles. The exact size and shape of the cavity 26 will depend on the desired equipment to be stored, and is within the knowledge of one of ordinary skill in the art.

[0030] The carrier 10 also preferably includes a second channel 28, FIG. 7, disposed on the ends 18 which works in conjunction with the channel 15 formed by the towers 14. The channels 15, 28 provide a region or groove for the strap 16 to grip on the carrier 10, thus providing the carrier 10 with additional strength. In a preferred embodiment, the carrier 10 includes a third channel 30, FIG. 8 disposed through the bottom 32 of the carrier 10. In this embodiment, a first strap 16' is used to secure the equipment to the carrier and is placed through the first, second, and third channels 15, 28, 30. A second strap 16" is then placed around at least the first channel 15 (and

possible partly through the second channel 28) and is secured to the automobile as will be described in greater detail below. In this embodiment, the carrier 10 is placed directly on the surface of the roof.

[0031] In an alternative embodiment, the carrier 10, FIGS. 9 and 10, includes hollow space or cavity 34 running along the length of the bottom surface 32. The hollow space or cavity 34 is sized to fit over a factory or aftermarket automobile roof rack (not shown) that is commonly installed on many vehicles. The hollow space or cavity 34 further aids in securing the carrier 10 to the automobile roof.

[0032] The bottom 32, FIGS. 4-10, of the carrier 10 preferably includes a high traction surface 36, such as a non-skid laminate, which is soft and does not scratch the surface of the automobile roof. The high traction surface 36 helps secure the carrier 10 to the roof of an automobile.

[0033] In yet another embodiment, the carrier 10, FIGS. 11-13, includes a longitudinal slot 40 running down the length L. The slot 40 is size to accept equipment E, such as a pair of skis. The carrier 10 also includes a first and second cavity 42, 44 sized to accept the binding B of a ski or snowboard. In a preferred embodiment, the carrier 10 also includes an interconnecting device 46, such as a "lock and key" or groove and tab, which facilitates the use of two or more carriers 10 as

shown in FIG. 13. The carrier 10 may also include a hollow space or cavity 34 sized to fit over an automobile roof rack 50 that is commonly installed on many vehicles. The hollow space or cavity 34 further aids in securing the carrier 10 to the automobile roof.

[0034] According to one method of using the carrier 10, at least one, preferably two or more, carriers 10, FIGS. 13 and 14, are placed a spaced distance D apart from each other (preferably at opposite ends of the equipment E). Next, equipment E, such as one or more snowboards, snow skis, water skis, kayaks, or surfboards, are then placed on the supporting surface 12 and/or placed in a slot 24, 40. In a first embodiment, a first strap 16' is placed around the equipment E, through the channel 15 formed by the towers 14, and around the sides 18 and bottom 32 of the carrier 10. In the preferred embodiment, the strap 16' is preferably placed through second and third channels 28, 30 as well. The strap 16' is then tightened to secure the equipment E to the carriers 10.

[0035] The carriers 10 can then be used to store the equipment E in while not in use, transport the equipment by hand, or secured the equipment E to a roof R of an automobile for long distance transportation. When securing an automobile roof R, the carriers 10 and equipment E are placed on the roof R. If a roof rack 50 is present. FIG. 13, the carriers 10 preferably include

a hollow cavity 34 that allows the carriers 10 to be placed over the roof rack 50. Otherwise, the carriers 10 are placed directly on the roof R. The carriers 10 are then secured to the roof R using a second strap 16". In the preferred embodiment, the second strap 16" is placed through the doors D of the automobile, though other methods of securing the carriers 10 to the automobile are also envisioned, such as, but not limited to, securing the carriers 10 to the roof rack or to roof mounting devices. The high traction surface 36 provides an additional, soft, yet secure surface for the carriers 10 to grip the roof R. In this manner, the carriers 10 can be easy installed on any automobile.

[0036] In a second embodiment, at least one carrier 10, preferably two or more, is placed directly on the roof R. Next, the equipment E is placed on the supporting surface 12 and/or placed in a slot 24, 40. A strap 16 is then placed around the equipment E is secured to the automobile in any manner described above. In the preferred embodiment, the strap 16 is also placed through the first channel 15.

[0037] Upon arrival at the destination, the user then simply removes the equipment E from the roof R by removing the strap 16". In the preferred embodiment, the first strap 16' secures the equipment E to the carriers 10 themselves, thus enabling the user to easily transport the equipment E and carriers 10 by hand

since the carriers 10 will keep the equipment E in an easily manageable package. Furthermore, the use of the first strap 16' enables the carriers 10 to function as a storage device, thus allowing the user to remove the equipment E from the roof R and quickly and easily stored the equipment E while not in use (such as during the off-season) without having to purchase a separate storage device. If only a single strap 16" is used, the equipment E can be removed directly from the carriers 10, thus allowing immediate access to the equipment E.

[0038] Modifications and substitutions by one of ordinary skill in the art are considered to be within the scope of the present invention.